COMMENTS AND RESPONSES

FOR

PUENTE HILLS LANDFILL

REVISED WASTE DISCHARGE REQUIREMENTS FOR WASTE DISPOSAL, ASSESSMENT MONITORING PROGRAM, AND CORRECTIVE ACTION PROGRAM

Note: For responses resulting in modifications to the tentative Order, deletions are shown in strikeout, additions are shown in bold, and items that have been relocated to better organize the tentative Order are underlined. Factual or editorial corrections are included in the revised tentative requirements without further discussion herein.

COMMENTS FROM COUNTY SANITATION DISTRICTS OF LOS ANGELES COUNTY:

WDR Comment No. 1, Item 64:

WDR Item 64 discusses the incinerator ash from the CREF and SERRF facilities that is currently disposed at the Landfill. The Sanitation Districts recommend that a clarifying statement be included that states that this incinerator ash is stabilized with cement prior to disposal at the Landfill.

Response:

The clarifying statement is appropriate and the tentative Order has been modified accordingly.

WDR Comment No. 2, Item 69:

WDR Item 69 makes reference to "construction stormwater permit No. 419S317018". A Sanitation Districts contractor, LT Excavating, obtained this permit in 2001 as part of the Lower Western Cut Project. This project was completed and the permit should not be active. The Sanitation Districts recommend that the reference to this construction stormwater permit be removed.

Response:

Construction stormwater permit No. 419S317018 is no longer active and reference to it has been removed from the tentative Order.

WDR Comment No. 3, Item 83:

The Sanitation Districts recommend that WDR Item 83 be removed. As described in numerous submittals from the Sanitation Districts, background groundwater quality conditions at the site have been characterized using soil equilibrium studies and groundwater monitoring results from Canyon 9 and Eastern Canyons prior to landfilling operations. Because of the heterogeneous nature of the groundwater quality at the Landfill, no concurrent background groundwater monitoring would be representative of any single downgradient monitoring well. As a result, inter-well analysis is not possible at the Puente Hills Landfill. Based on the specific hydrogeologic characteristics at the Puente Hills Landfill, the Sanitation Districts recommend that groundwater monitoring at the Landfill not be subject to inter-well analysis or background data verification.

Response:

The tentative waste discharge requirements are templated on post-release monitoring and reporting requirements developed by State Board staff in the Land Disposal Unit. These requirements rely on intra-well statistical analysis to identify any landfill releases to groundwater. A component of the template requirements is to establish background water quality monitoring points for inter-well comparison to compliance monitoring wells for the purpose of validating intra-well water quality data used in the statistical evaluation. As discussed in Finding No. 60 of the tentative Order, the Discharger has previously attempted to characterize background groundwater quality at the Puente Hills Landfill. summarized in the report "Puente Hills Landfill – Eastern Canyons Groundwater Quality Detection Monitoring Program, February 1998", there is a wide range of background groundwater quality at the site, which is not uncommon for canyon landfills. The Discharger's recommendation to eliminate template language referring to inter-well background water quality is consistent with historic monitoring at the Puente Hills Landfill, as approved by the Executive Officer, wherein inter-well background monitoring points have not been required. Regional Board staff agrees that including the template language in Finding No. 83 confuses the monitoring and reporting requirements of the Order, thus is deleted from the tentative Order.

WDR Comment No. 4, Item B.5(c):

Provision B.5(c) requires the Discharger to use a software program, MINITAB, to determine if the treated incinerator ash for the CREF and the SERRF may be hazardous using all available lead and cadmium test results. Other software programs exist which meet the USEPA SW-846 chapter 9 analysis requirements. The Sanitation Districts recommend that a clarifying statement be included in this provision that would allow the use of other software programs.

Response:

The clarifying statement "or comparable software as approved by the Executive Officer" does not diminish waste characterization requirements of provisions B.5.c, thus the suggested language is added to the tentative Order.

WDR Comment No. 5, Item G.1:

As stated in item G.1, water is applied to the site for irrigation and dust control purposes. The Sanitation Districts recommend that Item G.1 be modified to clarify other water uses are also permitted. Specifically, water is required for winter deck construction, road construction, and final cover construction to achieve desired compaction.

Response:

Usage of water for engineering purposes during landfill construction is an acceptable practice, thus, the tentative Order has been modified accordingly.

WDR Comment No. 6, Item G.3:

WDR Item G.3 states "Wastewater produced at the Landfill shall not be subject to WDRs, pursuant to provision G.1 above if it meets applicable requirements of the CWC, CCR, and HSC for recycled water." It is recommended that a provision be inserted that clarifies that the discharge of wastewater must comply with an NPDES permit issued in accordance with the federal Clean Water Act and CWC. In addition, G.3 states "The Discharger shall make an equivalence demonstration to the Executive Officer for each Landfill wastewater source proposed to be recycled at the Landfill." For clarification purposes, it is recommended that this provision be modified to "The Discharger shall demonstrate to the Executive Officer compliance with this provision before each Landfill wastewater source is used as an equivalent recycled water as defined above."

WDR Item G.3 should be clarified to acknowledge that requirements for recycled water currently utilized at the Landfill are also controlled by Water Reclamation Requirements for the San Jose Creek Water Reclamation Plant (Regional Board Order No. 97-072). Tertiary treated recycled water from San Jose Creek is used for landscape irrigation, dust control and cooling water at the Puente Hills Energy from Gas Facility.

Response:

Regional Board staff concurs that requirements in Section G of the tentative Order erroneously imply that the discharge of wastewater from the Puente Hills Landfill is acceptable, thus the Order is strengthened by a clarifying statement. For this reason the following provision has been added to the tentative Order:

No wastewater shall leave the Landfill except as permitted by an NPDES permit issued in accordance with the federal Clean Water Act (CWA) and CWC. The Discharger shall maintain and modify, as necessary, the NPDES Storm Water Pollution Prevention Plan developed for the Landfill.

This clarifying statement eliminates the need to reference screening levels for general NPDES permits (Provision G.8, including Attachment 2) which is being deleted from the tentative Order.

Regional Board staff also accepts the editorial rewrite of the portion of the provision that requires Executive Officer approval before each Puente Hills Landfill wastewater source is used as an equivalent recycled water.

Recycled water used at the Puente Hills Landfill that originates from the San Jose Creek Water Reclamation Plant is subject to reclamation requirements of Order No. 97-072 that controls usage practices for the recycled water. The tentative Order has been modified to clarifying that recycled water usage at the Puente Hills Landfill is subject to reclamation requirements of Order No. 97-072.

WDR Comment No. 7, Item G.4:

For consistency, it is recommended that WDR Item G.4 be clarified to remove the undefined terminology "for the purpose of reusing the wastewater". Without this statement, the provision will clearly prohibit mixing of waters to achieve recycled water standards.

Response:

Regional Board staff accepts the editorial rewrite to clarify that mixing of waters to achieve recycled water standards for wastewater used at the Puente Hills Landfill is prohibited.

WDR Comment No. 8, Item G.8:

It is the Sanitation Districts understanding that Item G.3 already prohibits the discharge of wastewater from the site unless it meets applicable requirements of the CWC, CCR, and HSC for recycled water. Accordingly, Item G.8 appears to be redundant and should be deleted.

Response:

Regional Board staff concurs. See response to WDR Comment No. 6, Item G.3, above.

WDR Comment No. 9, Item G.9:

WDR Item 47 already states, "application of the tributary rule requires the beneficial uses of any specifically identified water body apply to its tributary streams". Therefore, the inclusion of Item G.9 appears to be redundant. At minimum, the Sanitation Districts respectfully request the removal of language suggesting the Regional Board has performed a study of flow conditions, habitat values and beneficial uses of the surface waters within canyons/streams at the landfill.

Response:

Finding No. 47 introduces the concept of the Basin Plan tributary rule in the tentative Order and indicates that the rule will be applied to canyons/streams at the Puente Hills Landfill that are tributary to Main San Gabriel Hydrologic Subarea of the Los Angeles – San Gabriel Hydrologic Unit. Thus, Specification G.9 of the tentative Order is warranted

and is not being deleted. Upon further review of the tentative Order Regional Board staff believes that inclusion of this specification in the section regarding on-site use of water is awkward. In this context the language can be interpreted to suggest that the Regional Board has performed a study of flow conditions, habitat values and beneficial uses of the surface waters within canyons/streams at the Puente Hills Landfill. For these reasons the specification has been relocated to Section I (General Provisions) of the revised tentative Order and edited to reflect that the Regional Board is applying the beneficial uses for the Main San Gabriel Hydrologic Subarea of the Los Angeles – San Gabriel Hydrologic Unit for tributary canyons/streams.

M&RP Comment No. 1, Item 3:

In accordance with 23 CCR, division 3, section 3890, electronic reporting requirements are intended to replace requirements for the submittal of paper copies of reports beginning July 1, 2005. The Sanitation Districts recommend that the statement requiring documents larger than 8.5 inches by 11 inches be provided on paper to the Regional Board be removed. Oversized documents will be provided via Adobe Acrobat at an appropriate resolution for viewing and printing.

Response:

Regional Board staff recognizes that improved computer technology allows for efficient viewing and printing of oversized original documents. Staff concurs that the goal of electronic submittals is best served if entire documents are submitted in electronic format so that the request to eliminate the requirement to provide a hard copy of any page of a report that is larger than 8.5 inches by 11 inches is acceptable. The tentative M&RP has been modified accordingly.

M&RP Comment No. 2, Item 6:

The Sanitation Districts recommend that the immediate notification requirements for the identification of new COCs as a result of the Annual Appendix II leachate scan be removed. The identification of new COCs found within the containment system do not warrant the same level of importance as a detection of a COC at a monitoring well located downgradient of the Landfill. Moreover, comprehensive COC testing and the associated COC lists for Canyon 9 and the Eastern Canyons have been reported for many years. It is recommended that verified COCs continue to be prominently discussed in respective monitoring reports.

Response:

Annual leachate scans are utilized to refine the list of constituents of concern specific to the Puente Hills Landfill if constituents are confirmed in a follow-up semiannual scan. Regional Board staff concurs that the scans are part of routine monitoring activities which are not dissimilar to detection water quality monitoring results which will be reported on a semi-annual basis. The Discharger's request to eliminate immediate notification of leachate scan results does not diminish their ability to identify/respond to a release to

groundwater from the Puente Hills Landfill. The tentative M&RP has been modified to eliminate immediate notification of leachate scan results.

M&RP Comment No. 3, Item 7:

As described in numerous submittals from the Sanitation Districts, background groundwater quality conditions at the site have been characterized using soil equilibrium studies and groundwater monitoring results from Canyon 9 and Eastern Canyons prior to landfilling operations. Because of the heterogeneous nature of the groundwater quality at the Landfill, no concurrent background groundwater monitoring would be representative of any single downgradient monitoring well. As a result, inter-well analysis is not possible at the Puente Hills Landfill. Based on the specific hydrogeologic characteristics at the Puente Hills Landfill, the Sanitation Districts recommend that groundwater monitoring at the Landfill not be subject to (1) validating the intra-well background data sets (MRP Item 12), (2) the detection of man-made constituents in background wells (MRP Item 16), and (3) ongoing background well testing (MRP Item 17).

Response:

See also response to WDR Comment No. 3, Item 83, above. The tentative waste discharge requirements are templated on post-release monitoring and reporting requirements developed by State Board staff in the Land Disposal Unit. A component of the template requirements is to establish background water quality monitoring points for inter-well comparison for validation specific elements of the Puente Hills Landfill monitoring program. The Discharger has demonstrated to the satisfaction of Regional Board staff that identifying background water quality monitoring point(s) is prevented by the wide range of background groundwater quality at this canyon landfill. Implications for not being able to conduct ongoing background well testing at the Puente Hills Landfill include the inability to validate intra-well background data sets and to evaluate man-made constituents in background wells.

There is not requirement to establish new background monitoring points in the proposed tentative Order. This point is clarified through an expanded discussion of water quality monitoring at the Puente Hills Landfill as requested by the Discharger. Requirements for background water quality monitoring at the Puente Hills Landfill have not been deleted from the tentative Order because Regional Board staff believes the tentative Order that includes contingency language that background water quality monitoring may not be achievable. For example, requirements in Item No. 12.b.i.B of the tentative M&RP regarding man-made constituents in background wells indicate that "... any background well rejected pursuant to this item, for a given MPar, if the Discharger has not already explained the constituent's presence at that well to the satisfaction of the Executive Officer, the Discharger shall ...". In effect, Regional Board staff accepts that background monitoring points have previously been rejected.

M&RP Comment No. 4, Item 10:

As described in the response to MRP Item 6, the Sanitation Districts recommend that the immediate notification requirements for the identification of new COCs as a result of the Annual Appendix II leachate scan be removed. The identification of new COCs found within the containment system do not warrant the same level of importance as a detection of a COC in a monitoring well located downgradient of the Landfill. Moreover, comprehensive COC testing and the associated COC lists for Canyon 9 and the Eastern Canyons have been reported for many years. It is recommended that verified COCs continue to be prominently discussed in respective monitoring reports.

Response:

See response to M&RP Comment No. 2, Item 6, above.

M&RP Comment No. 5, Item 11:

MRP Item 11 states that "the Discharger shall implement a federal AMP for the Landfill within 90 days of the adoption of Order No. R4 2005 XXXX and perform the following monitoring and analysis requirements." The Sanitation Districts recommend that this statement be modified to reflect that the Discharger has completed an Evaluation Monitoring Program (EMP) for the site and is currently complying with an existing Corrective Action Program (WDR Order No. 99-059) for the Landfill.

The Sanitation Districts also propose to modify the notification requirement in MRP Item 11(b)(ii). After the detection and validation of a new COC at a monitoring well, it is recommended that the Discharger immediately notify the Regional Board via phone followed by a formal notification within fourteen days of a verification.

Response:

The modifications suggested by the Discharger more accurately reflect findings in the Order that an evaluation monitoring program, engineering feasibility study, and corrective action program have been completed, and or on-going in response to known releases to groundwater from the Main Canyon area of the Puente Hills Landfill. The comments are accepted and the tentative M&RP has been modified accordingly.

The detection of a constituent of concern at a monitoring well elevates the potential that the constituent can be a component of a release to groundwater from the Puente Hills Landfill. Thus, in addition to a thorough discussion of the detection in the commensurate semi-annual monitoring approach, verbal notification to alert Regional Board staff is warranted, as is a formal submittal which can be included in the Discharger's operating record and the Regional Boards correspondence file. Review of the notification requirements for monitoring results with the potential to become a component of a release to groundwater from the Puente Hills Landfill indicates that these requirements are not completely consistent in the tentative Order. Item 11 has been revised to incorporate consistent notification requirements that include verbal notice, follow-up correspondence, and a thorough discussion in the corresponding semi-annual report.

M&RP Comment No. 6, Item 12(a):

The Sanitation Districts recommend that the reference to "Monitoring Limit" be replaced with "Minimum Level". For reporting monitoring results, the Sanitation Districts propose to use Minimum Levels (MLs) and Reporting Limits (RLs) in place of method detection (MDL) and practical quantitation limit (PQL). The method detection limit does not provide meaningful information regarding the actual presence of contaminants. On October 2, 2002, the State Water Resources Control Board (SWRCB) issued the policy for the Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Plan). The State Implementation Plan requires the development and the use of minimum levels (MLs) when reporting water quality data. The ML represents the lowest quantifiable concentration in a sample based upon the proper application of analytic procedure and the absence of matrix interference. MLs also represent the lowest standard concentration on the calibration curve for a specific analytical technique after the application of appropriate method-specific factors. Accordingly, the Sanitation Districts also request that any reference to detections at or above a trace level should be removed from the MRP.

Response:

The incorrect technical term "monitoring limit" is being replaced with the correct term Minimum Level as defined in Attachment 1.

Since 2002, the Discharger has implemented a monitoring approach for evaluating trace level detections for the Puente Hills Landfill that are consistent with the State Implementation Plan. The tentative waste discharge requirements, templated on post-release monitoring and reporting requirements developed by State Board staff in the Land Disposal Unit adopt USEPA statistical methods that rely on Method Detection Limits and Practical Quantitation Limit methods (as defined in Attachment 1) for evaluating trace level detections. The purpose of Item 12(a) of the tentative M&RP is to reconcile the monitoring approach to evaluate trace level detections. To further clarify this monitoring approach the suggested language regarding the State Implementation Plan policies is accepted and the tentative M&RP has been modified accordingly.

M&RP Comment No. 7, Item 12(b):

MRP Item 12(b) discusses the intra-well comparison method that will be conducted for the monitoring parameters. The Sanitation Districts recommend that a clarifying statement be include which identifies which monitoring parameters are subject to the intra-well comparison method. The monitoring parameters for each compliance well that are subject to the routine analysis are indicated in Table 3.

Response:

The straightforward clarification statement submitted by the Discharge is acceptable. The tentative M&RP has been modified accordingly.

M&RP Comment No. 8, Item 12(d):

The Basin Plan water quality objectives for groundwater are not applicable for the naturally poor water quality at the Puente Hills Landfill. The Sanitation Districts propose to modify this statement such that the WQPSs for the Landfill are established as the natural background groundwater quality at the site, which are set to either the statistically predicted value or historical site background data (if the constituent naturally exists) or the minimum level (if the constituent does not naturally exist in the water).

Response:

The water quality protection standards for the Puente Hills Landfill are established in Item No. 19 of the M&RP as the natural background groundwater quality at the site. Regional Board staff agrees that discussion of water quality objectives established in the Basin Plan for groundwater in the Main San Gabriel River Basin in this portion of the M&RP is confusing. Discussion of these water quality objectives have been relocated to a more appropriate portion of the tentative Order, Finding No 46.

M&RP Comment No. 9, Item 12(e):

Due to the potential for numerous retests to be triggered from the revised WDR/MRP, it is recommended to modify these provisions to limit the absolute need for retesting. Conceptually, the discharger should be able to elect to either acknowledge the validity of laboratory results or retest to verify the result.

Response:

Allowing the Discharger to accept initial test results without requiring confirmatory retesting improves the Discharger's ability to respond to the initial result. Because the proposed modifications allows for an enhanced response, thus strengthens the monitoring and reporting program, the proposed revision is accepted and the tentative M&RP has been modified accordingly.

M&RP Comment No. 10, Item 12(f):

The Sanitation Districts believe that a qualifying statement should be included that allows the discharger to demonstrate, in accordance with 27 CCR Section 20420(k)(7), that a source other than the Landfill caused an MPar to produce a measurably significant increase at a given well or that the evidence is an artifact caused by an error in sampling, analysis, or statistical evaluation, or by natural variation in the groundwater. Changes in water quality that produce a measurably significant increase at a given well and result in placing that well/MPar pair from Detection Mode to Tracking Mode may occur even though the increase is not a result of a landfill release. This is especially true for naturally occurring constituents whose groundwater quality composition may change as a result of several natural groundwater processes. These

processes can include: (1) the progressive natural dissolution of aquifer materials as the groundwater flows from an upgradient to downgradient location, (2) the infiltration of vadose water from rain water mixing with groundwater, and (3) the cutoff of groundwater recharge that results from the installation and operation of containment systems.

Response:

The proposed clarifying statement is consistent with requirements of Section 20420(k)(7) of title 27 of the California code of Regulations that allows investigation of a source other than the Puente Hills Landfill in response to a measurably significant increase at a given monitoring well. The tentative M&RP has been modified accordingly.

M&RP Comment No. 11, Item 13:

As recommended for MRP Item 11(b)(ii) above, after the detection and validation of a new COC at a monitoring well, the Sanitation Districts propose to modify the notification requirements such that they immediately notify the Regional Board via phone followed by a formal notification within fourteen days of a verification.

Response:

See response to M&RP Comment No. 5, Item 11 above.

M&RP Comment No. 12, Item 14:

For any COC that does not have the minimum sample size required at a given compliance well, the Sanitation Districts propose to obtain eight additional samples quarterly rather than ten samples monthly. To establish an initial database for statistical analysis, 27 CCR, Section 20415(e)(6) requires a minimum of four data points collected on a quarterly basis. The Sanitation Districts believe that a minimum of two years is required to account for seasonal variations in water quality. The ten monthly samples specified in the tentative MRP do not provide sufficient time to reflect seasonal variations, and therefore would not be representative. The Sanitation Districts recommend this provision be modified to require the collection of eight quarterly samples in order to establish a meaningful initial database.

Response:

As indicated in the M&RP Item 12.b.i.A, the purpose of acquiring ten monthly samples is for accelerated background data procurement in order to implement evaluation methods as quickly as possible. Regional Board staff acknowledges that initially there may not be a statistically legitimate background data set but also recognizes the advantage of initiating the statistical methodology as soon as possible to begin evaluating any environmental risk from the constituent of concern in question. The recommendation as submitted is not accepted.

M&RP Comment No. 13, Item 15(b):

As discussed in response to WDR Item 69 above, construction stormwater permit No. 419S317018 was obtained in 2001 as part of the Lower Western Cut Project. This project was completed and the permit should not be active. The Sanitation Districts recommend that the reference to this construction stormwater permit be removed.

Response:

See response to WDR Comment No. 2, Item 69, above. Construction stormwater permit No. 419S317018 is no longer active and reference to it has been removed from the tentative Order.

M&RP Comment No. 14, Item 18:

The Sanitation Districts recommend that explanations for changes in MDLs and PQLs be "approved by" rather than "written and signed by" the owner/director of the analytical laboratory. These signatures may not be compatible with electronic reporting to GeoTracker.

Response:

"Approved by" rather than "written and signed by" is largely semantic given that the certification statement for all monitoring reports required in Item No. H.13 of the tentative Order includes the attached laboratory data. The recommendation is accepted and the tentative M&RP has been modified accordingly.

M&RP Comment No. 15, Item 19 (c):

The Sanitation Districts disagree with statement that there are no POC monitoring wells at the Landfill. All existing downgradient groundwater monitoring wells included in MRP Item 7 are designated Points of Compliance as described in previous WDRs and MRPs for the Puente Hills Landfill. These monitoring wells make up the groundwater monitoring network that can adequately ascertain if there is any impact to groundwater quality as a result of the operation of this waste management facility.

Response:

As described in Attachment 1, a Point of Compliance monitoring well for the purposes of the tentative Order is "for the ground water medium, a part of the landfill's Water Quality Protection Standard and means a conceptual vertical surface that is located, in map view, along the hydraulically downgradient limit of waste placement at the landfill and that extends downward through the uppermost aquifer underlying the Unit". The existing compliance monitoring wells are not located, in map view, along the hydraulically downgradient limit of waste placement, thus, by this strict definition are not Point of Compliance monitoring wells.

The tentative waste discharge requirements, templated on post-release monitoring and reporting requirements developed by State Board staff in the Land Disposal Unit, include

reference to "Point of Compliance". However, Item 19 (c) reflects the long standing monitoring approach at the Puente Hills Landfill, as approved by the Executive Officer, wherein compliance monitoring points are downgradient of a series of subsurface cutoff walls that are downgradient of the corresponding Point of Compliance. Acceptance of this monitoring approach is clarified by the statement in Item 19 (c) that "for the purposes of this M&RP POC monitoring points shall consist of the current compliance monitoring wells listed Item No. 7." However, the final sentence of Item 19 (c) (The POC monitoring points may change with time to existing wells closer to the POC) implies uncertainty with this monitoring approach. There is no intent to revise the compliance point monitoring approach at this time so that this statement is being deleted.

M&RP Comment No. 16, Item 20:

The Sanitation Districts recommend that the laboratory reports be "approved" rather than "signed" by director of the laboratory. In accordance with 23 CCR, division 3, section 3890, electronic reporting requirements are intended to replace requirements for the submittal of paper copies of reports beginning July 1, 2005. At this time, GeoTracker does not have the ability to accept signed laboratory reports.

Response:

See response to M&RP Comment No. 14, Item 18, above. The recommendation is accepted and the tentative M&RP has been modified accordingly.

M&RP Comment No. 17, Item 20 (d):

For quality assurance/quality control data, the Sanitation Districts propose to provide an explanation of any QA/QC measure that is outside the laboratory control limits. The existing language states that an explanation is required of any recovery rate that is less than 80 percent. Based on the chemical properties of a constituent, recovery rates will vary and certain compounds will not achieve 80 percent.

Response:

Regional Board staff is not opposed to alternative methodologies that provide equivalent information. The recommendation is acceptable and the tentative M&RP has been modified accordingly

M&RP Comment No. 18, Item 20 (f):

The Sanitation Districts propose to submit a technical report for an analytical methodology to report unknown chromatographic peaks. The Sanitation Districts' laboratory is currently unable to identify and quantify unknown peaks. However, we are in the process of implementing a Laboratory Information Management System (LIMS) that will be used for data handling and management functions of the laboratory. The LIMS will permit identification of unknown peaks in GC/MS chromatograms.

Response:

Regional Board staff is not opposed to alternatives methodologies that provide equivalent information. The recommendation is acceptable and the tentative M&RP has been modified accordingly

M&RP Comment No. 19, Item 20 (h):

The Sanitation Districts recommend that the definition of MDL be removed from the MRP. As discussed in MRP Item 12(a), the Sanitation Districts propose to use MLs and RLs in place of MDLs and PQLs. MDLs and PQLs do not provide meaningful information regarding the actual presence of contaminants. Instead, MLs represent the lowest quantifiable concentration in a sample based upon the proper application of analytic procedure and the absence of matrix interference. MLs also represent the lowest standard concentration on the calibration curve for a specific analytical technique after the application of appropriate method-specific factors.

Response:

The definition of MDL is included in Attachment 1 which is part of the tentative Order. Regional Board staff concurs that its inclusion in M&RP Item 20(h) is repetitive. The recommendation is accepted and the tentative M&RP has been modified accordingly.

M&RP Comment No. 20, Item 23:

For metals analysis, the Sanitation Districts propose to test for total metals with the option to also obtain filtered metals representative of the dissolved phase. Micropurge groundwater sampling procedures have eliminated much of the discrepancy between filtered and unfiltered data. Moreover, other landfills are not required to obtain both filtered and unfiltered samples. In the past, the Sanitation Districts have volunteered to obtain filtered data in order to demonstrate particulates within a groundwater sample can bias results.

Response:

In effect, micropurge sampling techniques eliminate the need to filter samples because suspended sediments are not incorporated into the sample. Because analysis of nonfiltered samples is a more conservative approach than that of for filtering samples, Regional Board staff accepts the recommendation and the tentative M&RP has been modified accordingly.

M&RP Comment No. 21, Item 28:

The Sanitation Districts request the testing frequency of treated incinerator ash be modified to reflect current quarterly monitoring requirements as specified in the existing MRP. Based upon consistent treatment results, the Regional Board previously reduced the sampling frequency from every 2,000 tons to quarterly. Also, note that ash was analyzed for dioxin every 20,000 tons from September 1991 through April 1993 and no

dioxin was detected. In response, the Regional Board removed this parameter from the MRP. The proposed increase in testing frequency is burdensome and unnecessary. The Sanitation Districts recommend that the existing sampling frequency and parameters be maintained in the proposed MRP.

Response:

The requested testing frequency reflects modifications to the monitoring requirements in Order No. 91-035 included in Order No 93-070 and previously accepted by Regional Board staff and/or the Executive Officer. The testing frequency has been revised to reflect current monitoring practice with the recognition that additional comments regarding ash waste disposal at the Puente Hills Landfill are forthcoming prior to the Regional Board's public meeting wherein the Puente Hills Landfill waste discharge requires will be heard.

M&RP Comment No. 22, Item 29:

The Sanitation Districts propose to use ASTM procedure C172-99 for collected incinerator ash samples for analysis. The existing MRP allows the ash samples to be collected either by collecting 4-hour composite samples or by using the ASTM Standard Procedure 172-85 (now updated to 172-99).

Response:

The requested testing frequency reflects modifications to the monitoring requirements in Order No. 91-035 included in Order No 93-070 and previously accepted by Regional Board staff and/or the Executive Officer. The testing frequency has been revised to reflect current monitoring practice with the recognition that additional comments regarding ash waste disposal at the Puente Hills Landfill are forthcoming prior to the Regional Board's public meeting wherein the Puente Hills Landfill waste discharge requirements will be heard.

M&RP Comment No. 23, Item 32:

The Sanitation Districts propose to determine the total depth of each compliance well annually during the fourth quarter. The depth to bottom for each monitoring well can be obtained when a groundwater sample is collected.

Response:

The intent of the M&RP is to assess the working condition of monitoring wells on an annual basis by checking for any sedimentation into each monitoring well. The monitoring date is not critical so that coordination with a water quality collection event is prudent. The recommendation is accepted and the tentative M&RP has been modified accordingly.

M&RP Comment No. 24, Item 35:

The Sanitation Districts propose to include data collected monthly in the semi-annual reports. The MRPs for other landfills including City of Burbank, Simi Valley, Sunshine Canyon, and Lopez Canyon require this information on a semi-annual basis.

Response:

The Discharger is correct in arguing that there is a precedent for the submittal of waste disposal information in corresponding semi-annual monitoring reports for other landfills in the Region. The request is accepted and the tentative M&RP has been modified accordingly.

M&RP Comment No. 25, Item 36:

The Sanitation Districts propose to generate monthly maps of the disposal areas and to include these monthly maps in the semi-annual reports. As stated above, regarding MRP Item 35, semi-annual reporting requirements are consistent with MRPs for other landfills.

Response:

See response to M&RP Comment No. 24, Item 35, above. The request is accepted and the tentative M&RP has been modified accordingly.

M&RP Comment No. 26, Item 37(b):

For dewatered sewage sludge analysis, the Sanitation Districts propose to analyze two digested, dewatered samples. One sample will be analyzed quarterly for soluble metals following the citrate Waste Extraction Test (WET) procedure. The second sample will be analyzed semi-annually for the following parameters: polychlorinated biphenyls (PCBs), trichloroethylene (TCE), perchloroethylene (PCE), carbon tetrachloride, DDT DDE, DDD, Endrin, Lindane, Methoxychlor, Toxaphene, 2,4-D and 2,4,5-TP (Silvex). This proposal is consistent with the existing MRP for the Puente Hills Landfill.

Response:

Quarterly testing of dewatered sewage sludge for soluble metals, polychlorinated biphenyls, trichloroethylene, perchloroethylene, carbon tetrachloride, DDT DDE, DDD, endrin, lindane, methoxychlor, toxaphene, 2,4-D and 2,4,5-TP (Silvex) is not an overly aggressive characterization of the sewage sludge waste. Board staff does not accept the recommendation for semi-annual versus quarterly testing of dewatered sewage sludge for polychlorinated biphenyls, trichloroethylene, perchloroethylene, carbon tetrachloride, DDT DDE, DDD, endrin, lindane, methoxychlor, toxaphene, 2,4-D and 2,4,5-TP.

M&RP Comment No. 27, Item 38:

The Sanitation Districts propose to include monthly treated incinerator ash disposal area maps and to include these monthly maps in semi-annual reports. As discussed above, semi-annual reporting requirements are consistent with MRPs for other landfills.

Response:

See response to M&RP Comment No. 24, Item 35, above. The request is accepted and the tentative M&RP has been modified accordingly.

M&RP Comment No. 28, Item 41:

The Sanitation Districts propose to include the COC report in the semi-annual report. Because of the amount of time required to collect samples, analyze the samples, obtain verified results from laboratories and prepare semi-annual reports, the Sanitation District request that the reporting dates for semi-annual reports be extended by one month. In addition, the Sanitation Districts would like to have the option, like other dischargers, to submit a combined semi-annual/annual report.

Response:

Regional Board staff does not oppose efficiencies brought about by combining reports if no required information is omitted. The Discharger is correct that there is a precedent for other dischargers in the Region to combine the annual report with a corresponding semi-annual monitoring report. Thus, it is acceptable to also combine the constituent of concern report with a semi-annual monitoring report. These requests are accepted and the tentative M&RP has been modified accordingly.

The long-standing standard reporting time for monitoring reports is 45 days after the last day of the sampling period. By this standard there is a maximum of about 75 days from the start of sampling to reporting of results. Regional Board staff does not accept revising this long-standing standard for reporting results at this time.

M&RP Comment No. 29, Item 42(b)(iii):

The Sanitation Districts propose to include the type of containers and preservatives used during the collection of samples in laboratory reports. The Sanitation Districts do not believe this information should be included in the text of the semi-annual monitoring report. For a typical sample, numerous containers are used to collect samples to preserve specific constituents. Also, chemical preservatives vary depending on the constituents to be analyzed.

Response:

Regional Board staff concurs that the laboratory reports are adequate for reporting such routine information as type of containers and preservatives used and that this routine information need not be summarized in semi-annual reports. The proposal is accepted and the tentative M&RP has been modified accordingly.

M&RP Comment No. 30, Item 42(c):

The Sanitation Districts request that requirements for reporting data via hard copies or CD ROMs be removed. As described above, in accordance with 23 CCR, division 3, section 3890, electronic reporting requirements are intended to replace requirements for the submittal of hard copy reports beginning July 1, 2005.

Response:

Regional Board staff concurs that the requirement to submit hard copies or electronic copies on CD ROMs is superceded by recently adopted electronic reporting requirements contained in 23 CCR, division 3, section 3890. The request is accepted in order to eliminate conflict with electronic reporting requirements and the tentative M&RP has been modified accordingly.

M&RP Comment No. 31, Table 1:

To simplify the MRP, Table 1 could be removed. The Sanitation Districts have been reporting COC lists in quarterly reports. A requirement to update the existing COC lists could instead be included in the MRP.

Response:

Pursuant to the M&RP requirements, the status of individual monitoring parameters (MPars) at each monitoring well must be tracked over time. While unwieldy, summarizing the information in a table is effective. The Discharger has not provided an acceptable alternative method. The recommendation is not accepted.

M&RP Comment No. 32, Table 2:

Table 2 should also include piezometer "PBX-16".

Response:

The correction is acknowledged and the tentative M&RP has been modified accordingly.

M&RP Comment No. 33, Table 3:

The Sanitation Districts recommend that the following constituents be removed from Table 3: electrical conductivity, total organic halogen (TOX), nitrite, cyanide and sulfide. Several of these parameters are redundant. Electrical conductivity provides the same information as total dissolved solids (TDS) because TDS is directly proportional to conductivity. Total organic halogen is a gross measure of chlorinated compounds. Chlorinated hydrocarbons commonly associated with landfills are already monitored separately by analyzing the Appendix I VOCs.

The Sanitation Districts do not believe that nitrite nitrogen will provide an indication of a release from the landfill. The primary source of all nitrates is atmospheric nitrogen gas.

From the atmosphere, gas is converted to organic nitrogen by some plant species by a process called nitrogen fixation. Organic nitrogen is decomposed by microorganisms to inorganic ammonium salts (ammonification). These in turn are converted to nitrates by a process called nitrification. The intermediate product - nitrite - is generally short lived and seldom accumulates in significant quantities in any natural environment.

The most common nitrogen contaminant identified in groundwater is dissolved nitrogen in the form of nitrate. Common sources of nitrate nitrogen include agriculture activities (fertilizers), the disposal of sewage, and from plant residue (as discussed above). In groundwater that is strongly oxidizing, nitrate nitrogen is the stable form of dissolved nitrogen. In an anaerobic environment, such as a landfill, the nitrate nitrogen is converted to N_20 and then nitrogen gas. Because nitrite has not been associated with landfills and monitoring for nitrite is not required for the majority of other landfills (City of Burbank, Simi Valley, Sunshine Canyon, Lopez Canyon, etc.), we recommend that nitrite be removed from MRP Table 3. However, we are not opposed to LCRS monitoring and 5-Year COC Scans for this constituent.

Regarding cyanide and sulfide, historical monitoring results from LCRSs indicate that these compounds are detected randomly and at low concentrations. Similar random detections have also been observed in the existing downgradient and background monitoring wells. In fact the only downgradient wells to detect sulfide those that have not been impacted any VOCs (M11A, EMP3, EMP4, EMP6, M51A, and M52B). Similarly, cyanide was primarily detected at wells not impacted by the landfill (M41A, M43A, EMP4, M51A and M52B), except for M31A and M04A. Moreover, downgradient cyanide detections were all within historical background levels. Based upon this information, we do not believe that either cyanide or sulfide are useful indicators of a potential release from the landfill. Accordingly, we would recommend that these parameters be removed from MRP Table 3. However, we again are not opposed to continued LCRS monitoring and 5-Year COC Scans for cyanide and sulfide.

Response:

The tentative waste discharge requirements are templated on post-release monitoring and reporting requirements developed by State Board staff in the Land Disposal Unit. Pursuant to M&RP requirements, the status of individual monitoring parameters (MPars) at each monitoring well will be evaluated through intra-well statistical analysis to identify any landfill releases to groundwater. Inherent in this monitoring approach is an evolution from more routine data collection and reporting of a large number of parameters to a more thorough analysis of the parameters with the highest potential for providing the earliest indication of a contamination release to groundwater. The analysis provide in the Discharger's email correspondence of October 6, 2005 (attached) is an example of the ongoing evaluation to continuously refine the monitoring program for the Puente Hills Landfill.

Regional Board staff concurs that electrical conductivity provides similar information total dissolved solids. Nonetheless, electrical conductivity results are easily collected in the field or laboratory and are an inexpensive confirmation of salinity levels in

groundwater samples. Regional Board staff does not accept the recommendation that electrical conductivity not be included as monitoring parameters for compliance monitoring wells at this time.

Regional Board staff concurs that total organic halides (TOX) results serve as a screening test for halogenated compounds (such as chlorinated organic solvents, pesticides, and PCBs) rather than a specific result for any one halogenated hydrocarbon compound. While chlorinated hydrocarbons commonly associated with landfills are monitored separately by analyzing the Appendix I volatile organic compounds this is not an exhaustive analysis of all compounds that may be represented in a TOX analysis. Regional Board staff does not accept the recommendation that TOX not be included as monitoring parameters for compliance monitoring wells at this time.

Research completed by the USEPA on landfills as bioreactors indicates that nitrites can occur in landfill leachate. Given the disposal history of sewage sludge at the Puente Hills Landfill, evaluation of nitrite as a constituent that may provide any early indication of a contamination release is not unwarranted and that nitrite is not required for other landfills within the Region is less relevant. Barring further information, Regional Board staff does not accept the recommendation that nitrite not be included as monitoring parameters for compliance monitoring wells at this time.

Regional Board staff concurs that historical monitoring results for cyanide and sulfide in leachate samples indicate random and low concentrations (see analysis provided in attached email correspondence of October 6, 2005). Regional Board staff accepts the recommendation that these constituents not be included as monitoring parameters for compliance monitoring wells at this time but continue to be monitored for in leachate for inclusion in future scans of constituents of concern.

M&RP Comment No. 34, Table 4:

To simplify the MRP, the Sanitation Districts recommend that Table 4 be removed. MRP Item 10 already specifies the COCs to be analyzed.

Response:

A general description of constituents of concern is included in Item No. 10 of the M&RP. However, the constituents vary for unlined versus lined portions of the Puente Hills Landfill and different constituents can be added over time pursuant to M&RP requirements. The status of individual constituents of concern at each monitoring well must be tracked over time. While unwieldy, summarizing the information in a table is effective. The Discharger has not provided an acceptable alternative method. The recommendation is not accepted.

Date: 10/6/2005 3:27:47 PM

Subject: Puente Hills - WDR/MRP Comments - Re: Cyanide, Sulfide and

Nitrite

Enrique,

The attached spreadsheet highlights total cyanide and sulfide detections in the Canyon 9 and Eastern Canyons LCRSs. As illustrated, these detections generally occur randomly and at low concentrations. Similar random detections have also been observed in the existing downgradient monitoring wells as well as in background monitoring wells (see attached pdf file). It's interesting that the downgradient monitoring wells that have detected sulfide have not been impacted any VOCs (M11A, EMP3, EMP4, EMP6, M51A, and M52B). Similarly, cyanide was primarily detected at wells not impacted by the landfill (M41A, M43A, EMP4, M51A and M52B), except for M31A and M04A. The downgradient cyanide detections were all within background levels summarized in Table 6-1 (see pdf file). Based upon this information, we do not believe that either cyanide or sulfide are useful indicators of a potential release from the landfill. Accordingly, we would appreciate if these parameters could be removed from MRP Table 3. However, we are not opposed to continued LCRS monitoring and 5-Year COC Scans for cyanide and sulfide.

Although we do not currently monitor for nitrite nitrogen, we do not believe that it would provide an indication of a release from a landfill. The primary source of all nitrates is atmospheric nitrogen gas. From the atmosphere, the gas is converted to organic nitrogen by some plant species by a process called nitrogen fixation. Organic nitrogen is decomposed by microorganisms to inorganic ammonium salts (ammonification). These in turn are converted to nitrates by a process called nitrification. The intermediate product - nitrite - is generally short lived and seldom accumulates in significant quantities in any natural environment.

The most common nitrogen contaminant identified in groundwater is dissolved nitrogen in the form of nitrate. Common sources of nitrate nitrogen include agriculture activities (fertilizers), the disposal of sewage, and from plant residue (as discussed above). In groundwater that is strongly oxidizing, nitrate nitrogen is the stable form of dissolved nitrogen. In an anaerobic environment, such as a landfill, the nitrate nitrogen is converted to N20 and then nitrogen gas. Because nitrite has not been associated with landfills and monitoring for nitrite is not required for the majority of other landfills (City of Burbank, Simi Valley, Sunshine Canyon, Lopez Canyon, etc.), we would appreciate if nitrite could be removed from MRP Table 3. However, again we are not opposed to LCRS monitoring and 5-Year COC Scans for this constituent.

Please let me know if you need any additional information regarding these compounds. Again, we believe that sulfide, cyanide and nitrite will not provide useful information as MPars at the Puente Hills Landfill. Thanks for listening to our concerns!

David

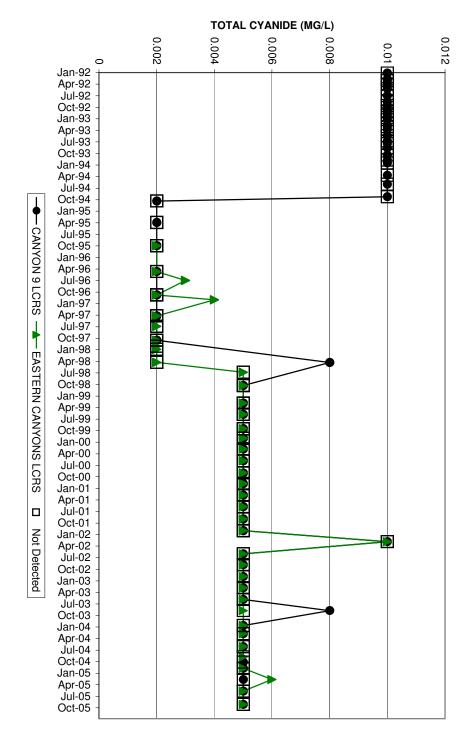
David L. Rothbart, P.E. Supervising Engineer Technical Services Department Los Angeles County Sanitation Districts 1955 Workman Mill Road Whittier, CA 90607 Telephone: (562) 699-7411, ext. 2412

FAX: (562) 692-2941

<<sulfide & cyanide in LCRSs.xls>> <<PHLF CN & Sulfide.pdf>>

"Rod Nelson (E-mail)" <RNELSON@waterboards.ca.gov>, "Asgian, Robert" <RAsgian@lacsd.org>, "Herbeck, Chris" <CHerbeck@lacsd.org>

TOTAL CYANIDE AT THE CANYON 9 LCRS AND THE EASTERN CANYONS LCRS
PUENTE HILLS LANDFILL EXHIBIT 1



TOTAL SULFIDE AT THE CANYON 9 LCRS AND THE EASTERN CANYONS LCRS
PUENTE HILLS LANDFILL **EXHIBIT 2**

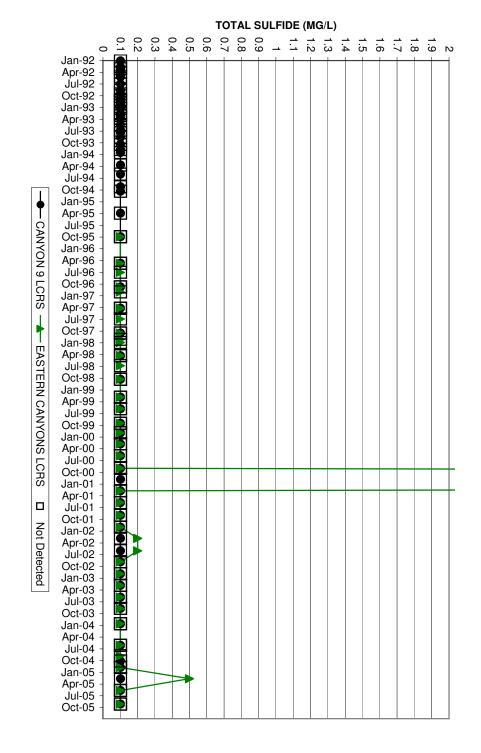


TABLE 6-1 PUENTE HILLS LANDFILL EASTERN CANYONS BACKGROUND WATER QUALITY - FIELD DATA

CONSTITUENTS		WEATHERS BEDROCK WELLS IN	D	SLTST STATE	ONE	CONGLON (Tiel and	ERATE Tro21	CLAYST SHLTSTON WELLS	ONE/	CONGLON ITEL 1 AND WELLS	ERATE Tec2)	BACK	IRALL DE FOR MOUND ELLS
General													
FIELD pH	PHI	4.21	7.9	6.55	8.28	5.38 -	7.34	6.67	8.64	6.76 -	5.99	4.21	8.64
CONDUCTIVITY	UMH05/CM	1366 - 6	600	626	6670	626 -	3690	569 -	5310	1585 -	3290	626	- 5570
TOTAL DISSOLVED SOLIDS	MG/L	969 - 6	967	367	6623	396 -	3369	306	4829	939 -	3010	306	- 6957
NITRATE NITROGEN	MGA	< 0.02 - 3	3.19	< 0.01	6.06	< 0.06 .	13.6	< 0.06 -	3.0	< 0.01 -	0.64	< 0.01	33.19
BORON	MG/L	0.30 - 1	.63	0.13 -	3.80	0.21 -	0.83	0.27	4.08	0.31 .	0.72	0.13	4.09
FLUGRICE	MG/L	0.43 - 3	1.23	0.24	2.04	0.43 -	1.52	0.21 -	3.14	0.62	2.48	0.24	3.23
TOTAL CYANIDE	MG/L		.02	< 0.002 +	0.01	< 0.01 -	< 0.01	< 0.002 -	0.003	< 0.01 -	< 0.01	< 0.002	0.02
TOTAL SULFIDE	MG/L	< 0.1 · <	0.1	< 0.1	0.1	< 0.1 .	< 0.1	< 0.1 -	0.8	< 0.1 ⋅	< 0.1	< 0.1	0.8
Anione			_										
CHLORIDE	MG/L	34.2 - :	260	23.8 -	319	236 -	186	21.6 -	609	95.8	248	23.6	509
SULFATE	MG/L	300 - 4	000	36.0 -	3400	90.8	1930	6.6	2370	262 -	1760	6.6	4000
BICARBONATE ALKALINITY	MG/L		866	232 -	889	126 -	669	196 -	1022	231 -	360	126	1022
TOTAL ALKALINITY	MG/L	220 - 1	866	236 .	889	126 -	669	196 -	1070	236 .	360	126	1070
Cetions			_										
SODIUM	MG/L	146 - 1	573	45.1	1060	26.3 -	316	37.7 -	910	128 -	341	26.3	- 1060
POTASSIUM	MG/L	4.4	131	2 .	36.4	2.3 -	87.4	2.5	15.0	7.0 -	16.6	2	131
CALCIUM-HARDNESS	MGAL	247 - 1	660	26.5	991	149 -	1270	7.5	1050	78.2	961	7.5	1560
MAGNESIUM-HARDNESS	MGA	7.7	100	30.6	2690	103 .	1190	8.2	2320	64.2 .	1080	8.2	2690
TOTAL HARDNESS	MGA	480 - 3	380	57.8	3230	676 -	2390	15	26	142 -	160	15	- 3380
Organic Matter							_			_		_	
SOLUBLE BOD	MG/L	< 0.7	8	< 0.7 -	22	< 0.7 -	23	< 0.7	87	< 0.7	2	< 0.7	- 87
SOLUBLE COD	MG/L	< 1.0 -	40	< 2 .	69	< 2 .	171	< 2	222	< 2 .	13	< 1.0	. 222
TOTAL DRGANIC CAREON	MG/L		88	0.31	44	0.36	22	0.45	58	1.7	6.1	0.31	- 88
AMMONIA NITROGEN	MGA		2.3	< 0.01 -	14.2	< 0.1	6.4	< 0.1	6.2	< 0.1	0.9	< 0.01	· 14.2
TOTAL ORGANIC HALOGEN	MG/L	< 0.08 -	70	< 0.08 -	710	< 40 -	470	7.6	26	64 .	86	< 0.08	- /10
Filtered Metals	_		_										
ANTIMONY	MGA		009	< 0.0006 →	0.024	< 0.0006 -	0.011	< 0.0006 -	0.0075	< 0.0005 -	0.016	< 0.0006	0.024
ARSENIC	MG/L		3180	< 0.001 -	0.0183	< 0.0010 -	0.004	< 0.0010 +	0.0199	0.0024 -	0.0078		
BARUM	MG/L		.13	< 0.01 ·	0.11	0.01 -	0.12	< 0.01	0.07	0.01	0.3	< 0.02	- 0.3
BERYLLIUM	MG/L		.02	< 0.0006 -	< 0.01	< 0.0006 -	< 0.01		< 0.0026	< 0.0006 -	< 0.01	< 0.0006	0.02
CADMIUM	MG/L	CO. T. C. C.	.06	< 0.001 -	0.04	< 0.001 .	< 0.01	< 0.001 -	< 0.003	< 0.001	< 0.01	< 0.001	- 0.15
CHROMIUM	MG/L		.15	< 0.01	0.13	< 0.01	0.02	< 0.01	< 0.04	< 0.01	< 0.02	< 0.01	- 0.42
COBALT	MG/L		.42	< 0.01	0.06	< 0.01 -	< 0.04	< 0.01 -	< 0.02		< 0.04	< 0.01	
COPPER	MG/L		.16	< 0.01	0.04	< 0.01 -	< 0.02	< 0.01	< 0.01	< 0.01 -	< 0.02	< 0.002	- 0.16
RON	MG/L	1 TO THE RESERVE OF T	8.9	< 0.02 ⋅	27.2	< 0.02	1.47	< 0.02	1.18	< 0.02	2.13	< 0.02	- 28.9 - 0.06
LEAD	MG/L		.06	< 0.02 ⋅	0.04	< 0.02 ·	< 0.04	< 0.02	< 0.02	< 0.02	< 0.04		
MERCURY	MG/L		0002	< 0.0001 -	0.0004		< 0.0001	< 0.0001 -	0.0001		< 0.0001	< 0.0001	
NICKEL	MGL		.66	< 0.02 -	2.6	< 0.02 -	< 0.03	< 0.02 -	0.04	< 0.02 -	< 0.03	< 0.02	2.6
SELENIUM	MG/L		029	< 0.001 +	0.007	< 0.0010 -	0.0066	< 0.0010 -	0.0071	< 0.0010 -	0.002	< 0.0009	0.029
SILVER	MG/L		014	< 0.006 ⋅	0.014	< 0.006	< 0.01	< 0.01	< 0.01	< 0.006 -	< 0.01	< 0.006	0.014
THALLIUM	MGA		0.10	< 0.001 .	< 0.10	< 0.002 -	< 0.05	< 0.001 -	< 0.005	< 0.002 ·	< 0.060	< 0.001	- < 0.10
TIN	MOL		0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06 -	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06
VANADIUM	MG/L		0.06	< 0.06 ⋅	< 0.06	< 0.06 -	< 0.06	< 0.05 -	< 0.07	< 0.06	< 0.06	< 0.06	< 0.07
BNC	MGIL	< 0.01 - 0	.85	<0.01 -	1.20	< 0.01	0.10	< 0.01 -	0.07	< 0.01 -	0.07	< 0.01	- 1.20

NOTES

Data are from ground water samples collected from 1997 strough 1997.

^{(1) -} Data obtained from wells M17A, M18A, M23A, M41A, M42A, M43A, and piezometers P18, S1, and S16.

^{121 -} Data obtained from wells M198 and piezometers P14, P16, P16, DM1, DM3, DM4, DM6, DM6, DM88, DM18, DM18A, DM18A, DM19, DM22, DM23, DM24, DM24A, and DM26.

^{(3) -} Date obtained from piezometers P17, P18, DM2, DM3A, DM3B, DM8, DM16, DM17, and DM17A.

^{(4) -} Data obtained from piezometers S6, DM7, DM9A, DM10, DM10A, DM13, DM13A, DM14, DM16, DM21, DM21A, DM32, DM32A, DM33, DM34, and DM36.

^{(5) -} Data obtained from piezometers P20, DM20, DM20A, and DM208

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PHLF 10/06/	* * * * * * * * * * * * * * * * * * *	DESCRIPTION	BARRIER 1 BEDROCK WELL, M10B, PHLF (SUB-TITLE D) DUPLICATE BARRIER 1 MONITORING WELL M11A, PHLF (SUBTITLE D, DUPLICATE) BARRIER 1 MONITORING WELL M11A, PHLF (SUBTITLE D, DUPLICATE) BARRIER 1 MONITORING WELL M11A, PHLF (SUBTITLE D SAMPLE) BARRIER 1 MONITORING WELL M11A, PHLF (SUBTITLE D SAMPLE)	ARRIER 1 MONITORING WELL M04B, P ARRIER 1 MONITORING WELL M04B, P ARRIER 1 MONITORING WELL M11A, P ARRIER 1 ALLUVIAL WELL, M04A, PH ARRIER 1 ALLUVIAL WELL, M04A, PH	ARRIER 1 BEDROCK WELL, M10B, PHLF (SUBTITLE D SAMPLE) VALUATION MONITORING WELL, EMP2, PHLF (SUBTITLE D SAMPLE) VALUATION MONITORING WELL EMP1, PHLF (SUBTITLE D SAMPLE) VALUATION MONITORING WELL EMP1, PHLF (SUBTITLE D) DUPLICATE ARRIER 3 ALLUVIAL WELL, M31A, PHLF (SUBTITLE D SAMPLE)	ARRIER 3 ALLUVIAL WELL, M33A, PHLF (SUBTITLE D SAMPLE) ARRIER 1 ALLUVIAL WELL, M05A, PHLF (SUBTITLE D SAMPLE) ARRIER 1 WELL, RMW6, PHLF (SUBTITLE D SAMPLE) VALUATION MONITORING WELL, EMP1, PHLF, (SUB D)	(SUB D) (DUPLICATE) (D) (B D) (SAMPLE)	RRIER 3 BEDROCK WELL R32B, PHLF (SUB D RRIER 1 BEDROCK WELL, M04B, (SUB D SAM RRIER 1 BEDROCK WELL, M04B, (SUB D SAM AL. MON. WELL, EMP2, PHLF (SUBTITLE D RRIER 1 ALLUVIAL WELL, M04A, PHLF (SUB	L WELL, MO4A, PHLF (SUB D SAMPL WELL, MO5A, PHLF (SUB D SAMPRING WELL EMP1, PHLF, (SUB D SAMPLING WELL EMP1, PHLF, (SUB D SAMPL)	RIER 3 BEDROCK WELL R34B, PHLF, (SUB D SAMPRIER 1 WELL, RMW6, PHLF (SUB D SAMPLE) RIER 1 BEDROCK WELL, M10B, PHLF (SUB D SAMPRIER 3 ALLUVIAL WELL, M33A, PHLF (SUB D SAMPRIER 1 ALLUVIAL WELL, M05A, PHLF (SUB D SAMPRIER 1 ALLUVIAL WELL)
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Footnote(s): A-AVERAGE OF DUPS, B-DUPLICATE SPIKE, C-CHECK NOTES TO USER, D-AMENDED TEST RESULT

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Footnote(s): A-AVERAGE OF DUPS, B-DUPLICATE SPIKE, C-CHECK NOTES TO USER, D-AMENDED TEST RESULT

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Footnote(s): A-AVERAGE OF DUPS, B-DUPLICATE SPIKE, C-CHECK NOTES TO USER, D-AMENDED TEST RESULT

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Footnote(s): A-AVERAGE OF DUPS, B-DUPLICATE SPIKE, C-CHECK NOTES TO USER, D-AMENDED TEST RESULT

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Footnote(s): A-AVERAGE OF DUPS, B-DUPLICATE SPIKE, C-CHECK NOTES TO USER, D-AMENDED TEST RESULT

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Footnote(s): A-AVERAGE OF DUPS, B-DUPLICATE SPIKE, C-CHECK NOTES TO USER, D-AMENDED TEST RESULT

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2/03/01 2/03/01 2/04/01 3/10/03 3/01/04	1437 D-0 5636 D-0 5656 D-0 3389 D-0 3245 D-0	100000	 V V V V					
03/04/04 03/05/04 03/10/04		V V V V V		 				
3/11/04 3/12/04 3/12/04 3/12/04 7/09/04	1042 D-G 1043 D-G 1048 D-G 1048 D-G 1375 D-G	0000	V V V V V					
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